



## Clark County Department of Building & Fire Prevention

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<b>Division:</b>	Building Division - Engineering	<b>Code Interpretation</b>	BE-CI-025
<b>Subject:</b>	SOIL LATERAL LOADS	<b>Effective Date:</b>	05/01/2007
<b>Code:</b>	IBC 1610.1 and 1610.1.1	<b>Reviewed Date:</b>	06/30/2015

### A. CODE REQUIREMENT

Section 1610.1 of the Southern Nevada Amendments to the IBC provides active pressure and at-rest pressure values for the design of basement, foundation, and retaining walls when a geotechnical report is not required.

### B. INTERPRETATION

1. Walls designed as cantilevered shall use the active pressure and walls designed as restrained shall use the at-rest pressure in their design.
2. Section 1610.1.1 of the Southern Nevada Amendments to the IBC provides equations for the determination of the seismic load due to the lateral earth pressure for basement, foundation, and retaining walls in seismic design categories D, E, or F. These equations are required to be used whether or not a geotechnical report is used for the soil lateral loads. The equation for yielding walls shall be used when the wall is designed as cantilevered and the equation for non-yielding walls shall be used when the wall is designed as restrained.

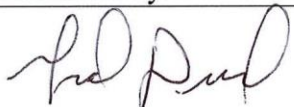

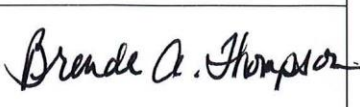
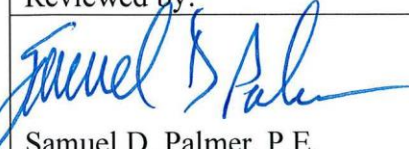
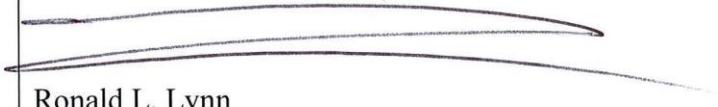
### C. RATIONALE

Yielding walls are walls that can move sufficiently to develop the minimum active earth pressure. Non-yielding walls are walls that do not satisfy this movement condition. The amount of movement required to develop the minimum active pressure is very small. A displacement of 0.002 times the wall height is typically sufficient to develop the minimum active earth pressure state (2003 NEHRP for Seismic Regulations for New Buildings and Other Structures, Part 2: Commentary, Section 7.5). Generally, free-standing gravity or cantilevered walls are considered to be yielding walls (except massive gravity walls founded on rock), whereas building basement walls restrained at the top and bottom are considered to be non-yielding.

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### Revision History:

<b>POLICY #</b>	<b>TITLE</b>	<b>Effective Date</b>	<b>Revised</b>	<b>Reviewed</b>
AD-CI-IBC-006	Soil Lateral Loads	5/1/2007		
BD-CI-025	Soil Lateral Loads			8/15/2008
BD-CI-025	Soil Lateral Loads			5/9/2013
BE-CI-025	Soil Lateral Loads			6/20/2014
BE-CI-025	Soil Lateral Loads			6/30/2015

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